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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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The Honorable John D. Dingell
Chairman, Subcommittee on Energy
and Power
Committee on Interstate and Foreign
Commerce
House of Representatives

Dear Mr. Chairman:

In connection with our report "Fossil Energy Research, Development, and Demonstration: Opportunities for Change," EMD-78-57, you questioned the Department of Energy's (DOE) industry cost participation policies. Pursuant to your request, we have reviewed the industry participation provisions of the laws applicable to DOE, with particular concern for provisions requiring cost sharing or mandating the size of demonstration plants. In so doing we restricted ourselves to the laws governing nonnuclear energy technologies, the area of your primary concern. As you know the laws and requirements applicable to nuclear energy are distinct and separate, as is explicitly recognized by subsection 3(b)(2) of the Federal Nonnuclear Energy Research and Development Act of 1974, 42 U.S.C. § 5902(b)(2) (1976), and subsection 107(a) of the Energy Reorganization Act of 1974, as amended, 42 U.S.C. § 5817(a) (1976). In addition, we have reviewed the most pertinent of DOE's regulations and proposed regulations with respect to cost participation.

As a general overall conclusion, we found that DOE has substantial discretion over the amount and circumstances in which industry cost participation will be required, if any. In particular, we are not aware of any statutory provision that mandates industry cost sharing in all phases of a demonstration project, nor are we aware of any statutory provision that mandates the size of demonstration plants. However, the law does require, with respect to the selection of demonstration plants, that the degree of financial support that may be provided by non-Federal entities be taken into consideration. In addition, when the estimated total costs of a demonstration project exceed a certain level, in some circumstances specific congressional authorization may be required for the particular project. For projects which come within these provisions, Congress has an opportunity to evaluate both the particular funding arrangements and the plant size on an individual demonstration project basis before a project is undertaken.

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However, as a general proposition, industry participation is not statutorily required, and cooperation and participation with DOE is not restricted to the private sector. DOE must coordinate nonnuclear energy programs with the heads of relevant Federal agencies, and, through fund transfers or other arrangements, may use their facilities, capabilities and experience for energy research, development and demonstration programs. Moreover, if DOE feels that participation with industry or other Government agencies is infeasible or inappropriate, it has legal authority to undertake efforts on its own, including the demonstration of commercial feasibility of energy technologies.

In addition, our general reading of DOE's regulations and proposed regulations concerning industry participation and cost sharing does not readily disclose any matters inconsistent with the provisions of DOE's nonnuclear energy statutes. Of course the application of the regulations to any particular project will depend on the facts and circumstances of the specific case.

In conducting our review, it was necessary to consider a number of different statutes in relation to the different forms of potential Federal involvement. Our legal staff has prepared a detailed analysis of the various laws that affect industry cost participation in DOE's nonnuclear energy programs, which we are including as an Appendix. In its March 21, 1979, letter to you, DOE did not specifically address the issue of industry participation, and we have not separately solicited DOE's comments. We hope this material will be helpful.

Sincerely yours,

R.F.KELLER

Deputy Comptroller General
of the United States

Enclosure

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Digest

1. There is no uniformity in nonnuclear energy program statutes regarding industry cost sharing or participation. Where Federal assistance is provided through joint Federal-industry corporation, maximum amount of Federal assistance has been specified by statute. Certain guidelines have been established by statute to minimize level of Federal assistance where Federal price supports have been authorized, but these do not establish cost sharing requirement by either dollar limitation on Federal assistance or maximum percentage of total cost of project. Both of these assistance methods require specific prior congressional approval before implementation.
2. Degree to which Federal Government may share risks in nonnuclear energy projects by guaranteeing certain aspects of private transactions differs substantially from program to program, but it is generally set forth in program statutes. Amount and nature of industry participation is not statutorily specified where contracts, grants or cooperative agreements are authorized. However, Federal Grant and Cooperative Agreement Act of 1977, 41 U.S.C.A. § 501, specifies circumstances when it is appropriate to use contract, grant or cooperative agreement. Some specific statutory guidance is also provided in Federal Nonnuclear Energy Research and Development Act of 1974, 42 U.S.C. § 5907, with respect to demonstration projects.
3. DOE has substantial discretion over amount and circumstances in which industry cost participation, if any, will be required for nonnuclear

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energy projects. Our general reading of DOE's regulations and proposed regulations concerning industry participation and cost sharing does not readily disclose any matters inconsistent with the provisions of DOE's nonnuclear energy statutes. Our application of the regulations to any particular project would depend on the facts and circumstances of the specific case.

4. Cooperation and partticipation with DOE in nonnuclear energy programs is not restricted to private sector. DOE must coordinate nonnuclear energy programs with heads of relevant Federal agencies, and, through fund transfers or other arrangements, may use their facilities, capabilities and experience for energy research, development and demonstration programs. Moreover, if DOE feels participation with industry or other Government agencies is infeasible or inappropriate, DOE has legal authority to undertake efforts on its own, including demonstration of commercial feasibility of energy technologies.

5. We are not aware of any nonnuclear energy statutory provision that mandates industry cost sharing in all phases of demonstration project or mandates size of demonstration plants. Criteria for selection of demonstration plants does require consideration of degree of financial support provided by non-Federal entities. When estimated total costs of demonstration project exceed certain level, specific congressional authorization may be required for project. Thus, at least for these projects, Congress has opportunity to evaluate both funding arrangements and plant size on an individual demonstration project basis before project is undertaken.

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APPENDIX

ANALYSIS OF INDUSTRY PARTICIPATION PROVISIONS IN LAWS RELATING TO NONNUCLEAR ENERGY TECHNOLOGIES

DOE'S BROAD AUTHORITY

Congress has granted DOE broad responsibilities and authority with respect to the development and implementation of the Nation's energy policies. In particular, Congress charged DOE

> "to establish and vigorously conduct a comprehensive, national program of basic and applied research and development, including but not limited to demonstrations of practical applications, of all potentially beneficial energy sources and utilization technologies * * *."

Subsection 3(b)(1) of the Federal Nonnuclear Energy Research and Development Act of 1974 (hereinafter referred to as the Nonnuclear Act), as amended, 42 U.S.C. § 5902(b)(1) (1976). (*)

> "In undertaking such program, full advantage must be taken of the existing technical and managerial expertise in the various energy fields within Federal agencies and particularly in the private sector." (Emphasis added.)

Subsection 2(d) of the Nonnuclear Act, as amended, 42 U.S.C. § 5901(d).

> "* * * To this end, the [Secretary of DOE] is authorized to make arrangements (including contracts, agreements and loans) for the conduct of research and development activities with private or public institutions or persons, including participation in joint or cooperative projects of a research, developmental, or experimental nature; to make payments (in lump sum or installments, and in advance or by way of reimbursement, with necessary adjustments on account of overpayments or underpayments); and generally to take such steps as he may deem necessary or appropriate to perform functions now or hereafter vested in him. * * *"

Subsection 107(a) of the Energy Reorganization Act of 1974, as amended, 42 U.S.C. § 5817(a).

(*) Unless otherwise specified, citations to the United States Code (U.S.C.) refer to the 1976 edition ; citations to the United States Code Annotated (U.S.C.A.) refer to the 1979 pocket part.

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FEDERAL INVOLVEMENT

Even though DOE has been granted this broad responsibility and authority with respect to energy, Congress has provided specific guidance as to the standards to be applied in evaluating the appropriateness of Federal involvement in particular energy research, development, and demonstration programs. Subsection 5(b) of the Nonnuclear Act, 42 U.S.C. § 5904(b), provides:

"The Congress * * *directs that the execution of the comprehensive research, development, and demonstration program shall conform to the following principles:

"(1) Research and development of nonnuclear energy sources shall be pursued in such a way as to facilitate the commercial availability of adequate supplies of energy to all regions of the United States.

"(2) In determining the appropriateness of Federal involvement in any particular research and development undertaking, [DOE] shall give consideration to the extent to which the proposed undertaking satisfies criteria including, but not limited to, the following:

"(A) The urgency of public need for the potential results of the research, development, or demonstration effort is high, and it is unlikely that similar results would be achieved in a timely manner in the absence of Federal assistance.

"(B) The potential opportunities for non-Federal interests to recapture the investment in the undertaking through the normal commercial utilization of proprietary knowledge appear inadequate to encourage timely results.

"(C) The extent of the problems treated and the objectives sought by the undertaking are national or widespread in their significance.

"(D) There are limited opportunities to induce non-Federal support of the undertaking through regulatory actions, end use controls, tax and price incentives, public education, or other alternatives to direct Federal financial assistance.

"(E) The degree of risk of loss of investment inherent in the research is high, and the availability

> [of] risk capital to the non-Federal entities which might otherwise engage in the field of the research is inadequate for the timely development of the technology.
>
> "(F) The magnitude of the investment appears to exceed the financial capabilities of potential non-Federal participants in the research to support effective efforts."

Moreover, once a determination has been made that Federal involvement is appropriate, Congress has set forth the forms of Federal assistance that DOE may provide to induce participation by others. Subsection 7(a) of the Nonnuclear Act, as amended, 42 U.S.C.A. § 5906(a), provides in part, that DOE

> "* * * may utilize various forms of Federal assistance and participation which may include but are not limited to--
>
> "(1) joint Federal-industry experimental, demonstration, or commercial corporations * * *;
>
> "(2) contractual arrangements with non-Federal participants including corporations, consortia, universities, governmental entities and nonprofit institutions;
>
> "(3) contracts for the construction and operation of federally owned facilities;
>
> "(4) Federal purchases or guaranteed price of the products of demonstration plants or activities * * *;
>
> "(5) Federal loans to non-Federal entities conducting demonstrations of new technologies;
>
> "(6) incentives, including financial awards, to individual inventors, such incentives to be designed to encourage the participation of a large number of such inventors; and
>
> "(7) Federal loan gurantees and commitments thereof * * *."

NO GENERAL PROVISION ON INDUSTRY COST SHARING

Although Congress addressed with specificity the issues of (1) Federal involvement in energy research, development and demonstration programs

and (2) the forms of Federal assistance which may be used, the Nonnuclear Act does not include a general and uniformly applicable provision regarding the amount and degree to which industry must share the costs of a project for which Federal assistance is provided. The Nonnuclear Act is, of course, the general and comprehensive statute governing Federal nonnuclear energy research, development and demonstration, but section 3 thereof, 42 U.S.C. § 5902, requires that DOE comply with provisions contained in other laws relating to nonnuclear energy sources and incorporates their more specific programs into the comprehensive national program.

The Nonnuclear Act does contain, however, some specific costing provisions with respect to certain particular forms of Federal assistance or particular types of energy. Similar particularized costing provisions are also included in certain of the other legislation relating to nonnuclear energy technologies, while in other instances the legislation is silent. In short, there is no uniformity. This absence of uniformity regarding industry cost sharing need not be viewed as a deficiency, however, but may merely reflect a congressional recognition of the wide diversity of stages of development and economic viability among the various sources of nonnuclear energy, which may require differing and particularized cost sharing provisions, if any, to induce industry participation in their development. Nevertheless, the absence of uniformity requires a review of a number of nonnuclear energy statutes in relation to industry cost sharing. We have chosen to organize our review on the basis of the form of Federal assistance provided.

JOINT FEDERAL-INDUSTRY CORPORATIONS

Congress has set forth standards with some specificity, including cost sharing, where a joint Federal-industry corporation is used to "design, construct, operate, and maintain one or more experimental, demonstration, or commercial-size facilities, or other operations which will ascertain the technical, environmental, and economic feasibility of a particular energy technology." Subsection 7(b)(1) of the Nonnuclear Act, 42 U.S.C. § 5906(b)(1). Subsection 7(b) of the Nonnuclear Act, supra, also provides, in part:

> "(5) The estimated Federal share of the construction, operation, and maintenance cost over the life of each corporation shall be determined in order to facilitate a single congressional authorization of the full amount at the time of establishment of the corporation.
>
> "(6) The Federal share of the cost of each such corporation shall reflect (A) the technical and economic risk of

> the venture, (B) the probability of any financial return to the non-Federal participants arising from the venture, (C) the financial capability of the potential non-Federal participants, and (D) such other factors as * * * [DOE] may set forth in proposing the corporation: Provided, That in no instance shall the Federal share exceed 90 per centum of the cost." (Emphasis added.)

In addition, Congress retained some controls over DOE's ability to form joint Federal-industry corporations:

> "(A) Prior to the establishment of any joint Federal-industry corporation pursuant to this Act, [DOE] shall submit to the Speaker of the House of Representatives and the President pro tempore of the Senate, and to the appropriate committees of the House of Representatives and the Senate a report setting forth in detail the consistency of the establishment of the corporation with the principles and directives set forth in section 5 [set forth in part above] * * *, and the proposed purpose and planned activities of the corporation.
>
> "(B) No such corporation shall be established unless previously authorized by specific legislation enacted by the Congress." (Emphasis added.)

Subsection 7(b)(7) of the Nonnuclear Act, 42 U.S.C. § 5906(b)(7). When considering a specific authorization, Congress has an opportunity to carefully review the cost sharing arrangements, over and above the requirement that "in no instance shall the Federal share exceed 90 per centum of the cost."

We are not aware that this form of Federal assistance has been used. However, we note that subsection 6(b)(3)(D) of the Nonnuclear Act, 42 U.S.C. § 5905(b)(3)(D), requires DOE to invite and consider proposals from potential participants, based upon Federal assistance and participation in the form of a joint Federal-industry corporation, to commercially demonstrate technologies for producing substitutes for natural gas, including coal gasification. In conjunction with these efforts, DOE is required to make recommendations and issue a report on the viability of using this form of Federal assistance or participation.

FEDERAL PRICE SUPPORTS

Where Federal assistance in the form of Federal price supports is to be used, Congress has established guidelines which DOE is required to follow. These guidelines do not establish a cost sharing requirement by either a dollar limitation on Federal assistance or a maximum percentage

of the cost which the Federal Government may not exceed; however, they do establish procedures which DOE must follow, and make provision for specific prior congressional approval before implementation of a price support program, which provides opportunities for careful evaluation of the extent of Federal assistance needed for price supports. Subsection 7(c) of the Nonnuclear Act, 42 U.S.C. § 5906 (c), provides, in part:

> "Competitive systems of price supports proposed for congressional authorization pursuant to this Act shall conform to the following guidelines:
>
> "(1) The [DOE] shall determine the type and capacities of the desired full-scale, commercial-size facility or other operation which would demonstrate the technical, environmental, and economic feasibility of a particular nonnuclear energy technology.
>
> "(2) The [DOE] may award planning grants for the purpose of financing a study of the full cycle economic and environmental costs associated with the demonstration facility selected pursuant to paragraph (1) of this subsection. Such planning grants may be awarded to Federal and non-Federal entities including, but not limited to, industrial entities, universities, and nonprofit organizations. Such planning grants may also be used by the grantee to prepare a detailed and comprehensive bid to construct the demonstration facility.
>
> "(3) Following the completion of the studies pursuant to the planning grants awarded under paragraph (2) of this subsection regarding each such potential price supported demonstration facility for which [DOE] intends to request congressional authorization, he shall invite bids from all interested parties to determine the minimum amount of Federal price support needed to construct the demonstration facility. The [DOE] may designate one or more competing entities, each to construct one commercial demonstration facility. Such designation shall be made on the basis of those entities [sic] , (A) commitment to construct the demonstration facility at the minimum level of Federal price supports, (B) detailed plan of environmental prctection, and (C) proposed design and operation of the demonstration facility.

* * * * *

"(5) The estimated amount of the Federal price support for a demonstration facility's product over the life of such facility shall be determined by the [DOE] to facilitate a single congressional authorization of the full amount of such support at the time of the designation of the successful bidders.

"(6) No price support program shall be implemented unless previously authorized by specific legislation enacted by the Congress. (Emphasis added.)

Again, we are not aware that this form of Federal assistance has been used. We note, however, that subsection 6(b)(3)(E) of the Nonnuclear Act, 42 U.S.C. § 5905(b)(3)(E), requires DOE to invite and consider proposals from potential participants, based upon Federal assistance and participation through guaranteed prices or purchase of the products, to commercially demonstrate technologies for producing syncrude and liquid petroleum products from coal. In conjunction with these efforts, DOE is required to make recommendations and issue a report on the viability of using this form of Federal assistance or participation.

FEDERAL GUARANTEES

The very nature of a Federal guarantee transaction involves non-Federal participation, usually a private borrower and a private lender. The degree to which the Federal Government may share the risks in nonnuclear energy projects by guaranteeing certain aspects of private transactions differs substantially from program to program, but is generally set forth in the program statutes. These include:

1. Subsection 19(b) of the Nonnuclear Act, as amended, 42 U.S.C.A. § 5919(b), which authorizes the guarantee of the principal and interest on bonds, debentures, notes and other obligations issued by any borrower for financing the construction and startup costs of demonstration facilities for the conversion of domestic coal, oil shale, biomass, and other domestic resources into alternative fuels, provided the amount guaranteed to any borrower at any time

(a) does not exceed an amount equal to 75 percent of the project cost of the demonstration facility as estimated at the time the guarantee is issued and

(b) does not exceed 60 percent of that portion of the actual total project cost of any demonstration

facility which exceeds the project cost of such facility as estimated at the time the guarantee is issued.

2. Subsection 19(y) of the Nonnuclear Act, as amended, 42 U.S.C.A. § 5919(y), which authorizes the guarantee of the principal and interest on bonds, debentures, notes and other obligations issued by any borrower for financing the construction and startup costs of demonstration facilities for the conversion into synthetic fuels of, or the generation of desirable forms of energy from, municipal or industrial waste, sewage sludge, or other municipal organic wastes, provided the amount guranteed

(a) shall not exceed 75 percent of the total cost of the commercial demonstration facility, as determined by DOE and

(b) may not exceed 90 percent of the total cost of the commercial demonstration facility during the period of construction and startup.

3. Section 201 of the Geothermal Energy Research, Development, and Demonstration Act of 1974, as amended, 30 U.S.C.A. § 1141, which authorizes Federal loan guarantees for the development, construction and operation of facilities for the demonstration or commercial production of energy using geothermal resources, subject to the limitations that

(a) the amount of the guaranty for any loan for a project may not exceed $100,000,000 and

(b) the guaranty is to apply only to so much of the principal amount of any loan as does not exceed 75 percent of the aggregate cost of the project.

4. Section 10 of the Electric and Hybrid Vehicle Research, Development and Demonstration Act of 1976, as amended, 15 U.S.C.A. § 2509, which authorizes DOE to guarantee the principal and interest on loans for research and development related to electric and hybrid vehicle technology, prototype development, capital equipment and initial operating expenses, provided the amount of the guarantee

(a) shall not exceed $3,000,000 and

(b) shall apply only to so much of the principal amount of the loan involved as does not exceed 90 percent of the aggregate cost of the activity with respect to which the loan is made.

Aside from these examples which relate directly to research, development and demonstration of nonnuclear energy technologies, DOE also has responsibility for administering the following Federal guarantee programs for nonnuclear energy:

1. Section 102 of the Energy Policy and Conservation Act, as amended, 42 U.S.C. § 6211, authorizes Federal loan guarantees for developing new underground coal mines, not to exceed $30,000,000 per person (including affiliates) and not to exceed 80 percent of the lesser of (a) the principal balance of the loan or (b) the cost of developing the new underground coal mine.

2. Section 451 of the Energy Conservation and Production Act, as amended, 42 U.S.C. § 6881, authorizes Federal guarantees of the outstanding principal amount of any loan, note, bond, or other obligation evidencing indebtedness for financing energy conservation measures or renewable resource energy measures installed in any building or industrial plant. The aggregate outstanding principal amount guaranteed at any one time with respect to any borrower may not exceed $5,000,000, and such amount may not exceed 90 percent of the cost of the energy measure financed.

Although each of the foregoing Federal guarantee programs has been authorized in legislation, we note that Congress has retained some specific control over their use and implementation by inclusion of the following provision in the Department of the Interior and Related Agencies Appropriation Act, 1979, Pub. L. No. 95-465 (October 17, 1978), 92 Stat. 1279, 1296:

"None of the funds made available to the Department of Energy under this Act shall be used to implement or finance authorized price support or loan guarantee programs unless specific provision is made for such programs in this or future appropriation acts."

That Act also provides that

"* * * not to exceed $1,750,000 shall be available for a reserve to cover any defaults from loan guarantees issued for electric or hybrid vehicle research, development, and production as authorized by section 10 of the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976 (15 U.S.C. 2509): Provided further, That the indebtedness guaranteed or committed to be guaranteed under said law shall not exceed the aggregate of $8,750,000 * * *." 92 Stat. at 1295.

No comparable references are included in the Department of the Interior and Related Agencies Appropriation Act, 1979, supra, for the other Federal guarantee programs discussed above. However, some of these programs, such as the geothermal energy program, are funded through the Energy and Water Development Appropriation Act, which has not contained a similar limitation on the implementation or financing of authorized loan guarantee programs.

OTHER FORMS OF FEDERAL ASSISTANCE

The degree of industry monetary participation contemplated when other forms of Federal assistance are used, such as grants, contracts or cooperative agreements, is less clear. Generally this has not been specified in the program statutes. Examples where these forms of Federal assistance are specifically authorized without cost sharing requirements in nonnuclear energy legislation include:

1. Subsection 105(c)(1) of the Geothermal Energy Research, Development, and Demonstration Act of 1974, 30 U.S.C. § 1125 (c)(1), which authorizes cooperative agreements with utilities and non-Federal governmental entities for construction of facilities to demonstrate the production of energy for commercial disposition from geothermal resources.

2. Subsections 5(c) and 6(d) of the Solar Heating and Cooling Demonstration Act of 1974, 42 U.S.C. §§ 5503(c) and 5504(d), which authorize such contracts and grants as may be necessary or appropriate for the development (for commercial production and residential use) of solar heating systems and combined solar heating and cooling systems.

3. Subsection 7(d)(1) of the Solar Energy Research, Development, and Demonstration Act of 1974, 42 U.S.C. § 5556(d)(1), which authorizes cooperative agreements with non-Federal entities for construction of facilities and equipment to demonstrate solar energy technologies.

4. Section 5 of the Solar Photovoltaic Energy Research, Development, and Demonstration Act of 1978, 42 U.S.C.A. § 5584, which authorizes the Secretary of DOE to enter into agreements with private or public entities for the design, purchase, fabrication, testing, installation and demonstration of photovoltaic components and systems, but also to provide up to 75 percent of the purchase and installation costs of photovoltaic components or systems.

5. Section 6 of the Solar Photovoltaic Energy Research, Development, and Demonstration Act of 1978, 42 U.S.C.A.

§ 5585, which authorizes the Secretary of Energy to enter into such contracts and grants as may be necessary or appropriate for the development for commercial production and utilization of photovoltaic components and systems.

6. Section 112 of Public Law No. 95-39 (June 3, 1977), 42 U.S.C. § 5907a (Supp. I 1977), which authorizes small grants for the development and demonstration of energy projects, not to exceed $50,000 during any 2-year period to any participant.

7. Subsection 304(b) of the Automotive Propulsion Research and Development Act of 1978, 15 U.S.C.A. § 2703(b), which authorizes DOE to make contracts and grants for research and development leading to advanced automobile propulsion systems with private entities as well as with any Federal agency.

As indicated, these laws do not contain specific industry cost participation requirements against which to measure DOE's performance.

DEMONSTRATION PROJECTS

Although the nonuclear energy program statutes authorizing Federal assistance in the form of grants, contracts or cooperative agreements have generally not specified cost sharing requirements, a major purpose of these kinds of Federal assistance, as indicated in the examples set forth immediately above, is for demonstration projects. The Nonnuclear Act, supra, provides some specific guidance with respect to demonstration projects.

First, subsection 8(a) of the Nonnuclear Act, 42 U.S.C. § 5907(a), defines demonstration projects to include

"* * * pilot plants demonstrating technological advances and field demonstrations on new methods and procedures, and demonstrations of prototype commercial applications for the exploration, development, production, transportation, conversion, and utilization of energy resources."

It also generally authorizes DOE to "provide Federal assistance for or participation in demonstration projects" and to "enter into cooperative agreements with non-Federal entities to demonstrate the technical feasibility and economic potential of energy technologies on a prototype or full-scale basis."

Second, of particular significance for the purposes here, subsection 8(b) directs DOE in reviewing potential demonstration projects to consider, inter alia:

> 1. "the availability of non-Federal participants to construct and operate the facilities or perform the activities associated with the proposal and to contribute to the financing of the proposal;"
>
> 2. "the total estimated cost including the Federal investment and the probable time schedule;" and
>
> 3. "the proposed participants and the proposed financial contributions of the Federal Government and of the non-Federal participants".

A financial award "may be made only to the extent of the Federal share of the estimated total design and construction costs, plus operation and maintenance costs." § 8(c)(1). However, despite the mandate to consider the financial contributions of non-Federal participants in reviewing potential demonstration projects, cost sharing is not statutorily required in any phase of a demonstration project nor are there any restrictions on the size of demonstration projects.

Nevertheless, the Congress has retained specific authority in subsections 8(e) and (f) to review and approve or disapprove certain of these demonstration projects before they are undertaken:

> "(e) If the estimate of the Federal investment with respect to construction costs of any demonstration project proposed to be established under this section exceeds $50,000,000, no amount may be appropriated for such project except as specifically authorized by legislation hereafter enacted by the Congress.
>
> "(f) If the total estimated amount of the Federal contribution to the construction cost of a demonstration project does not exceed $50,000,000, [DOE] is authorized to proceed with the negotiation of agreements and implementation of the proposal subject to the availability of funds under the authorization of appropriations pursuant to section 16: Provided, That if such Federal contribution to the construction cost is estimated to exceed $25,000,000 the [Secretary] shall provide a full and comprehensive report on the proposed demonstration project to the appropriate committees of the Congress and no funds may be expended for any agreement under the authority granted by this section prior to the expiration of sixty

> calendar days (not including any day on which either House of Congress is not in session because of an adjournment of more than three calendar days to a day certain) from the date on which the [Secretary's] report on the proposed project is received by the Congress. Such reports shall contain an analysis of the extent to which the proposed demonstration satisfies the criteria specified in subsection (b) of this section [which is set forth, in part, above] ."

A similar but more restrictive congressional control provision is included in subsection 7(f) of the Solar Energy Research, Development, and Demonstration Act of 1974, 42 U.S.C. § 5556(f). Therefore, for projects which come within these provisions, Congress has an opportunity to evaluate the plant size and the particular funding arrangements on an individual demonstration project basis before a project is undertaken.

FEDERAL GRANT AND COOPERATIVE AGREEMENT ACT

Aside from the nonnuclear energy statutes, DOE is subject to the provisions of the Federal Grant and Cooperative Agreement Act of 1977, Pub. L. No. 95-224 (February 3, 1978), 41 U.S.C.A. §§ 501 et seq., in implementing its nonnuclear energy programs. This statute affects DOE's use of contracts, grants and cooperative agreements, and has an indirect impact on DOE's decisions on funding arrangements.

One of the stated purposes of the Federal Grant and Cooperative Agreement Act is

> "to promote increased discipline in the selection and use of types of contract, grant agreement, and cooperative agreements and to maximize competition in the award of contracts and encourage competition, where deemed appropriate, in the award of grants and cooperative agreements." 41 U.S.C.A. § 501(b)(3).

In furtherance of this objective, subsection 7(a) of the Federal Grant and Cooperative Agreement Act, 41 U.S.C.A. § 506(a), provides:

> "Notwithstanding any other provision of law, each executive agency authorized by law to enter into contracts, grant or cooperative agreements, or similar arrangements is authorized and directed to enter into and use types of contracts, grant agreements, or cooperative agreements as required by this Act." (Emphasis added.)

Pursuant to its authority to issue supplementary interpretative guidelines under section 9 of the Act, 41 U.S.C.A. § 508, the Office of Management and Budget (OMB) has construed subsection 7(a) of the Act, supra, as follows:

"If, prior to the passage of the Act, an agency was authorized to use one or more of the three instruments--procurement contracts, grants, or cooperative agreements--and is not prohibited from using any of them, this provision enables it to enter into any of the three types of arrangements, subject to the criteria set forth in sections 4, 5, and 6."

43 Fed. Reg. 36862 (August 18, 1978). Sections 4, 5 and 6 of the Federal Grant and Cooperative Agreement Act of 1977, 41 U.S.C.A. §§ 503-505, respectively provide:

"USE OF CONTRACTS

"Sec. 4. Each executive agency shall use a type of procurement contract as the legal instrument reflecting a relationship between the Federal Government and a State or local government or other recipient--

"(1) whenever the principal purpose of the instrument is the acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; or

"(2) whenever an executive agency determines in a specific instance that the use of a type of procurement contract is appropriate.

"USE OF GRANT AGREEMENTS

"Sec. 5. Each executive agency shall use a type of grant agreement as the legal instrument reflecting a relationship between the Federal Government and a State or local government or other recipient whenever--

"(1) the principal purpose of the relationship is the transfer of money, property, services, or anything of value to the State or local government or other recipient in order to accomplish a public purpose of support or stimulation authorized by Federal statute, rather than acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; and

"(2) no substantial involvement is anticipated between the executive agency, acting for the Federal Government, and a State or local government or other recipient during performance of the contemplated activity.

"USE OF COOPERATIVE AGREEMENTS

"Sec. 6. Each executive agency shall use a type of cooperative agreement as the legal instrument reflecting a relationship between the Federal Government and a State or local government or other recipient whenever--

"(1) the principal purpose of the relationship is the transfer of money, property, services, or anything of value to the State or local government or other recipient to accomplish a public purpose of support or stimulation authorized by Federal statute, rather than acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; and

"(2) substantial involvement is anticipated between the executive agency, acting for the Federal Government, and the State or local government or other recipient during performance of the contemplated activity."

Therefore, the Federal Grant and Cooperative Agreement Act, supra, and OMB's interpretation of its provisions affect DOE's authority under nonnuclear energy program statutes authorizing contracts, grants or cooperative agreements. Even though some of the nonnuclear energy program statutes referred to above may not specifically authorize all three forms of Federal assistance addressed in the Federal Grant and Cooperative Agreement Act--contracts, grants and cooperative agreements--, since each program statute does at least authorize one or more of them and prohibits none, DOE may be obliged in implementing these nonnuclear energy programs to choose the most appropriate among them in each instance, in accordance with the criteria set forth in the Federal Grant and Cooperative Agreement Act. This choice in any given instance may well be related to the circumstances under which industry cost sharing, if any, would be appropriate.

We note, however, that as a matter of policy OMB has stated:

"Agencies should limit Federal involvement in assisted activities to the minimum consistent with program requirements. Nothing in [the Federal Grant and Cooperative Agreement Act] should be construed as authorizing agencies to increase their involvement beyond that authorized by other statutes.

* * * * *

"Consistent with the purposes of [the Federal Grant and Cooperative Agreement Act] , agencies are encouraged to maximize competition among all types of recipients in the award of grants or cooperative agreements, in consonance with program purposes."

43 Fed. Reg. 36863 (August 18, 1978).

SUMMARY OF STATUTORY PROVISIONS

In partial summary, we find there is no uniformity in the nonnuclear energy program statutes regarding industry cost sharing or participation. Where Federal assistance is provided through a joint Federal-industry corporation, the maximum amount of Federal assistance has been specified by statute. Certain guidelines have been established by statute to minimize the level of Federal assistance where Federal price supports have been authorized, but these do not establish a cost sharing requirement by either a dollar limitation on Federal assistance or a maximum percentage of the total cost of a project. The degree to which the Federal Government may share the risks in nonnuclear energy projects by guaranteeing certain aspects of private transactions differs substantially from program to program, but it is generally set forth in the program statutes. On the other hand, the amount and nature of industry participation is not statutorily specified where contracts, grants or cooperative agreements are authorized. However, Congress has specified the circumstances when it is appropriate to use a contract, grant agreement, or cooperative agreement, and some specific statutory guidance is provided with respect to demonstration projects. In addition, some statutes require specific prior congressional approval before certain projects or programs may be implemented. Nevertheless, as a general overall conclusion, DOE has substantial discretion over the amount and circumstances in which industry cost participation will be required, if any. In particular, we are not aware of any statutory provision that mandates industry cost sharing in all phases of a demonstration project, nor are we aware of any statutory provision that mandates the size of demonstration plants.

DOE REGULATIONS

DOE has promulgated, or is in the process of promulgating, some regulations which specifically address the matter of industry participation and cost sharing. DOE recently issued a final rule establishing agency-wide procurement regulations, which include a complete subpart entitled "Cost Participation." 43 Fed. Reg. 15881, 15905 (April 14, 1978), as modified in 44 Fed. Reg. 34424, 34431 (June 14, 1979). DOE has also issued a final rule prescribing agency-wide Federal assistance regulations, which are distinct from, and do not cover contracts under, the Federal and DOE

procurement regulations. 44 Fed. Reg. 12920 (March 8, 1979). Within the new DOE assistance regulations, the DOE policy on cost participation with respect to grants (classified to 10 C.F.R. § 600.107(a)) has been "reserved," as have Subpart C--Cooperative Agreements, Subpart D--Direct Loans, and Subpart E--Loan Guarantees, since they have not yet been completed. 44 Fed. Reg. 12928, 12930 (March 8, 1979). However, DOE has issued a proposed rule on cooperative agreements, which contains specific provisions on cost participation. 44 Fed. Reg. 20594, 20596 (April 5, 1979).

The cost participation provisions of DOE's procurement regulations, supra, classified to 41 C.F.R. Chapter 9, state:

"SUBPART 9-4.59--COST PARTICIPATION

"§ 9-4.5900 Scope of subpart.

"(a) This subpart sets forth the DOE policy on cost participation by organizations performing research, development, and demonstration projects under DOE prime contracts. This subpart does not cover efforts and projects performed for DOE by other Federal agencies.

"(b) Cost participation is a generic term denoting any situation where the Government does not fully reimburse the performer for all allowable costs necessary to accomplish the project or effort under the contract. The term encompasses cost sharing, cost matching, cost limitation (direct or indirect), participation in kind, and similar concepts.

"§ 9-4.5901 Policy

"(a) Cost participation by the performer will not be obtained under contracts where the principal purpose is the acquisition of goods and services for Government use. (*)

(*) The underlined portions were included in the proposed rule, 43 Fed. Reg. 15905 (April 14, 1978), but have been deleted from the final rule, which has not been reprinted in the Federal Register. DOE's explanations, stated at 44 Fed. Reg. 34431 (June 14, 1979), were:

"Deletes 9-4.5901(a) since 9-4.5901(b) adequately describes the types of situations in which cost participation may be required."

"Deletes the term 'pilot plant' since the terminology is adequately defined under 'demonstration' technologies programs, etc."

"(b) When DOE supports performer research, development and demonstration efforts, where the principal purpose is ultimate commercialization and utilization of the technologies by the private sector, and when there are reasonable expectations by [sic] the performer will receive present or future economic benefits beyond the instant contract, as a result of performance of the effort, it is DOE policy to obtain cost participation. Full funding will be provided for early phases of development programs when the technology has not been adequately evaluated or proven and when actual or potential technological problems are still great.

"(c) In making the determination to obtain cost participation, and evaluating present and future economic benefits to the performer, DOE will consider the technical feasibility, projected economic viability, societal and political acceptability of commercial application, as well as possible effects of other DOE supported projects in competing technologies.

"(d) The propriety, manner, and amount of cost participation must be decided case-by-case.

"(e) Cost participation is required for demonstration projects unless exempted by the Under Secretary. Demonstration projects, pursuant to this subpart, include pilot (*) [see footnote, page A-17] plants demonstrating technological advances and field demonstrations of new methods and procedures, and demonstrations of prototype commercial applications for the exploration, development, production, transportation, conversion, and utilization of energy resources.

"§ 9-4.5902 Application.

"(a) The DOE cost participation policy set forth in § 9-4.5901 applies to all prime contracts except those exempted therein.

"(b) Cost participation is not contemplated in contracts for the operation of Government-owned or leased, contractor-operated facilities of an unspecified life, or continuing cost-reimbursement type contracts for mission-oriented, large-scale research programs performed, using equipment or facilities which are either partially or wholly Government-owned.

"(c) Potential benefits to the performer are less likely where basic research is involved and cost participation, if any, is expected to be less than in circumstances where a product

is being developed. As projects or proposed efforts reach stages approaching commercial viability, cost participation should be based on the overall project risk.

"(d) Where in accordance with § 9-4.5901, cost participation would be appropriate, but it is determined by the cognizant program assistant secretary that payment of the full allowable cost of the contractual effort is necessary in order to obtain the services of a particular organization. Cost [sic] participation need not apply.

"(e) The performer's cost participation may be provided by other companies or associations with which it has contractual arrangements to perform the project. The fact that a project is jointly funded, e.g., where DOE and an industry association fund a third party performer, does not preclude cost participation by the performer.

"§ 9-4.5903 Amount of cost participation.

"(a) Cost participation may be in various form or combination, which may include but is not limited to cash outlays, real property, or interest therein needed for the project, personal property or services, cost matching, forgone fee, or other in kind participation. Cost participation may include the value of contributions of other non-Federal sources, provided the contributions were not previously obtained free of charge from Federal sources. The value of any non-cash contribution shall be established by DOE after consultation with the performer. Cost participation may be accomplished by a contribution to either direct or indirect costs provided such costs are otherwise allowable in accordance with the cost principles of the contract. Allowable costs which are absorbed by the performer as its share of cost participation may not be charged directly or indirectly to the Federal Government under other contracts, agreements, or grants.

"(b) Organizations should contribute a reasonable amount of the total project cost covered under the contract. The ratio of cost participation should correlate to the apparent advantages available to performers and the proximity of implementing commercialization. In setting the levels of cost participation by the performer, the contracting officer, in consultation with the program office, should consider such factors as:

"(1) The availability of the technology to the performer's competitors.

"(2) The risks involved in achieving commercial success.

"(3) The length of time before the project is likely to be commercially successful.

"(4) Improvements in the performer's future commercial competitive position.

"(5) Disposition of property at project's end.

"(6) Whether the potential benefits will be lessened if the performer lacks production or other capabilities with which to capitalize the results of the project. However, if the results of the project are transferable to commercial organizations with production capabilities, and the performing organization would obtain patent or other property rights which could be sold or licensed, this should be considered.

"(7) Whether the performing organization lacks adequate non-Federal sources of funds from which to make cost participation.

"(c) The manner of cost participation and how it is to be accomplished shall be set forth in the contract.

"(d) The handling of any return from sale of products from the project shall be set forth in the contract.

"(e) The solicitation document shall state whether any cost participation is required and may set forth a target level of cost participation. Though technical considerations are normally most important, the degree of cost participation will be considered when cost to the Government is to be a major factor in a selection decision.

"(f) Unsolicited proposals will be considered on a case-by-case basis by the program office in consultation with Procurement, as to the appropriateness of cost participation. If cost participation is considered to be appropriate, guidance for determining an appropriate level may be included in the procurement authorization package, but it should be recognized that the extent and type of cost participation is subject to negotiation.

"(g) The extent to which a performing organization contributes to the cost of a project will be taken into consideration in the allocation of patent rights under DOE's waiver policy. (See § 9-9.109-9 for patent waiver policies.)

"(h) Fee or profit will not be paid the performer under a cost participation contract. Forgone fee or profit will be considered in establishing the degree of cost participation.

"(i) Where cost participation is appropriate, fee or profit will not be paid to any member of the proposing team having a substantial and direct interest in the project. Competitive subcontracts placed with the prior written consent of the contracting officer and subcontracts for routine supplies and services are not covered by the prohibition.

"§ 9-4.5904 Disposition of property and equipment furnished or acquired.

"Disposition instructions for any property and equipment furnished or acquired using Federal funds during performance shall be set forth in the contract.

"§ 9-4.5905 Records.

"Recipients of contracts which provide for cost participation shall be required to maintain records adequate to reflect the nature and extent of their cost contribution as well as those costs charged to DOE. Such records shall be subject to audit by DOE.

The cost participation provisions in DOE's proposed rule on cooperative agreements, supra, to be classified to 10 C.F.R. § 600.214, are very similar to those in the DOE procurement regulations. They state:

"§ 600.214 DOE policy on cost participation.

"(a) Scope of section. (1) This section sets forth the DOE policy on cost participation by participants under DOE Cooperative Agreements.

"(2) Cost participation is a generic term denoting any situation where the Government does not fully reimburse the participant for all allowable costs necessary to accomplish the project or effort. The term encompasses cost sharing, cost matching, cost limitation (direct or indirect), participation in kind, and similar concepts.

"(3) In those instances where cost participation is established by statute, this section will apply only to the extent it is not inconsistent with the statute. (Emphasis added.)

"(b) Policy. (1) When DOE supports performance under a cooperative agreement, where the principal purpose is ultimate commercialization or utilization of technology(s) by the private sector, or present or future economic benefits beyond the instant award, as a result of performance of the effort, it is DOE policy to obtain cost participation.

"(2) DOE will consider the technical feasibility, projected economic viability, societal and political acceptability of commercial application, as well as possible effects of other DOE supported projects in completing [sic] technologies in determining the extent of cost participation.

"(3) The manner and amount of cost participation must be decided on a case-by-case basis.

"(4) Cost participation is required for demonstration projects. Demonstration projects, pursuant to this subpart, include demonstrating technological advances and field demonstrations of new methods and procedures, and demonstrations of prototype commercial applications for the exploration, development, production, transportation, conversion and utilization of energy resources.

"(c) Application. The DOE cost participation policy set forth herein is applicable to all cooperative agreements within the following limitations:

"(1) Potential benefits to a participant are less likely where basic research is involved and cost participation, if any, is expected to be less than in circumstances where advanced or engineering development is being undertaken. As projects or proposed efforts reach stages approaching commercial viability, cost participation should be based on the overall project risk.

"(2) In those instances where it is determined by the cognizant program Assistant Secretary that payment by DOE of a substantial part of or the full allowable cost of the contemplated effort is in the best interest of the DOE program mission, cost participation may be minimized or waived (except as required under (b)(4) above).

"(3) Cost participation may be provided by third party entities (other companies or associations). The fact that a project is jointly funded (e.g., where DOE and an industry association fund a third party participant) does not preclude cost participation by the participant.

"(d) Cost participation requirements. (1) The value of any non-cash contribution shall be established by DOE after consultation with the participant. Cost participation may be accomplished by a contribution to either direct or indirect costs provided such costs are otherwise allowable in accordance with the cost principles of the award. Allowable costs which are absorbed by the participant as its share of cost participation may not be charged directly or indirectly or may not have been charged in the past to the Federal Government under other contracts, agreements, or grants, nor may other Federal funds be used as cost participation unless specifically authorized by statute.

"(2) Participants should contribute a reasonable amount of the total project cost covered under the award. The ratio of cost participation should correlate to the apparent advantages available to participants and the proximity of implementing commercialization. In setting the levels of cost participation by the participant, the Contracting Officer, in consultation with the program office, should consider such factors as:

"(i) The availability of the technology to the participant's competitors.

"(ii) The risks involved in achieving commercial success.

"(iii) The length of time before the project is likely to be commercially successful.

"(iv) Improvements in the participant's future commercial competitive position.

"(v) Disposition of property at project's end.

"(vi) Whether the potential benefits will be lessened if the participant lacks production or other capabilities with which to capitalize the results of the project. However, if the resuts [sic] of the project are transferable to entities with production capabilities, and the performing participant would obtain patent or other property rights which could be sold or licensed, this should be considered.

"(vii) Whether the performing organization lacks adequate non-Federal sources of funds from which to make cost participation.

"(3) The manner of cost participation and how it is to be accomplished shall be set forth in the award.

"(4) The handling of any return from sale of products from the project shall be set forth in the award.

"(5) The solicitation document shall state whether any cost participation is required and may set forth a target level of cost participation. The extent of cost participation in unsolicited proposals will be considered on a case-by-case basis.

"(6) The extent to which a participant contributes to the cost of a project will be taken into consideration in the allocation of patent rights under DOE's waiver policy.

"(7) Fee or profit will not be paid the participant(s) under a cooperative agreement.

"(e) Records. Participants in Cooperative Agreements shall be required to maintain records adequate to reflect the nature and extent of their costs and to insure that the required cost participation is achieved."

Our general reading of the foregoing DOE regulations and proposed regulations concerning industry participation and cost sharing does not readily disclose any matters inconsistent with the provisions of DOE's nonnuclear energy statutes. The application of the regulations to any particular project will of course depend on the facts and circumstances of the specific case.

COOPERATION WITH OTHER GOVERNMENT AGENCIES

As stated previously, subsection 5(b) of the Nonnuclear Act, 42 U.S.C. § 5904(b), does provide specific guidance concerning the standards to be applied in evaluating the appropriateness of Federal involvement in particular energy research, development, and demonstration programs. However, once a determination has been made that Federal involvement is appropriate, it does not necessarily follow that some form of industry participation or Federal assistance to industry is consequently required. Cooperation and participation with DOE is not restricted to the private sector, nor is DOE precluded from undertaking energy research and development on its own.

In fact, DOE must coordinate nonnuclear programs with the heads of relevant Federal agencies in order to minimize unnecessary duplication of programs, projects, and research facilities. 42 U.S.C. § 5903a. In addition, Congress directed that

> "In the exercise of his responsibilities * * * [the Secretary of DOE] shall utilize, with their consent, to the fullest extent he determines advisable the technical and management capabilities of other executive agencies having facilities, personnel, or other resources which can assist or advantageously be expanded to assist in carrying out such responsibilities. The [Secretary] shall consult with the head of each agency with respect to such facilities, personnel, or other resources, and may assign, with their consent, specific programs or projects in energy research and development as appropriate. In making such assignments under this subsection, the head of each such agency shall insure that--
>
> "(1) such assignments shall be in addition to and not detract from the basic mission responsibilities of the agency, and
>
> "(2) such assignments shall be carried out under such guidance as the [Secretary] deems appropriate."

Subsection 104(i) of the Energy Reorganization Act of 1974, as amended, 42 U.S.C. § 5814(i). Among other things, subsection 4(c) of the Nonnuclear Act, as amended, 42 U.S.C. § 5903(c), authorizes DOE, through fund transfers or contracts, to initiate and maintain energy research, development and demonstration programs or activities utilizing the facilities, capabilities, expertise, and experience of Federal agencies.

Among the programs specifically authorizing DOE's use of other Federal agencies are the following:

> 1. Section 9 of the Solar Heating and Cooling Demonstration Act of 1974, 42 U.S.C. § 5507, which authorizes DOE to enter into arrangements with appropriate Federal agencies to carry out solar heating and combined solar heating and cooling projects and activities (including demonstration projects) with respect to apartment buildings, office buildings, factories, crop-drying facilities and other agricultural structures, public buildings (including schools and colleges), and other non-residential, commercial, or industrial buildings as may be appropriate.
>
> 2. Sections 523 and 524 of the National Energy Conservation Policy Act, 42 U.S.C.A. §§ 8243 and 8244, which authorize DOE

to provide technical and financial assistance by interagency agreement and specifically permit the transfer of funds to any Federal agency to demonstrate the application to Federal buildings of solar heating and cooling technology through the design, acquisition, construction, and installation of solar energy equipment.

3. Subsection 6(d) of the Solar Photovoltaic Energy Research, Development, and Demonstration Act of 1978, 42 U.S.C.A. § 5585(d), which requires DOE, in consultation with the General Services Administration and/or the Department of Defense, to enter into arrangements with appropriate Federal agencies to carry out projects and activities (including demonstration projects), with respect to Federal buildings and facilities, as may be appropriate for the demonstration of photovoltaic systems.

4. Subsection 7(d)(2) of the Solar Energy Research, Development, and Demonstration Act of 1974, 42 U.S.C. § 5556(d)(2), which authorizes cooperative agreements with other Federal agencies for the construction of solar facilities and equipment and operation of facilities to produce energy for direct Federal utilization.

5. Subsection 105(c)(2) of the Geothermal Energy Research, Development, and Demonstration Act of 1974, 30 U.S.C. § 1125 (c)(2), which authorizes cooperative agreements with other Federal agencies for the construction and operation of facilities to demonstrate the production of energy for direct Federal consumption from geothermal resources.

6. Subsection 304(b) of the Automotive Propulsion Research and Development Act of 1978, 15 U.S.C.A. § 2703(b), which authorizes DOE to make contracts and grants for research and development leading to advanced automobile propulsion systems with any Federal agency as well as other entities.

7. Subsections 8(a) and (e) of the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976, as amended, 15 U.S.C.A. §§ 2507(a) and (e), which require DOE to provide funds by contract to initiate, continue, supplement, and maintain research, development, and demonstration activities relating to electric and hybrid vehicles with any Federal agency as well as other entities. (DOE is required, however, to "seek cost-sharing with others to the maximum extent practical" to conduct demonstrations.)

Accordingly, cooperation and participation with DOE is not restricted to the private sector. DOE must coordinate nonnuclear programs with the heads of relevant Federal agencies and may use their facilities, capabilities, and experience for energy research, development and demonstration programs.

DOE ENERGY RESEARCH, DEVELOPMENT AND DEMONSTRATION

Although DOE is authorized to participate with both other Government agencies and the private sector, DOE is not legally precluded from undertaking energy research, development and demonstration on its own wholly with Government funds, unless its broad discretion is limited by a specific provision of law. To emphasize DOE's broad general responsibilities with respect to the development and implementation of the Nation's energy policies referred to earlier, the Congress provided:

> "The [Secretary of DOE] is authorized to exercise his powers in such manner as to insure the continued conduct of research and development and related activities in areas or fields deemed by the [Secretary] to be pertinent to the acquisition of an expanded fund of scientific, technical, and practical knowledge in energy matters." (Emphasis added.)

Subsection 107(a) of the Energy Reorganization Act of 1974, as amended, 42 U.S.C. § 5817(a). Consequently, if DOE feels that participation with industry or other Government agencies is infeasible or inappropriate, it has legal authority to undertake efforts on its own, "including demonstration of commercial feasibility" of energy technologies.

Among the responsibilities Congress explicitly lodged with DOE in section 103 of the Energy Reorganization Act of 1974, as amended, 42 U.S.C. § 5813, are:

> 1. "encouraging and conducting research and development, including demonstration of commercial feasibility and practical applications of the extraction, conversion, storage, transmission, and utilization phases related to the development and use of energy from fossil, nuclear, solar, geothermal, and other energy sources;" (Emphasis added.) 42 U.S.C. § 5813(2).
>
> 2. "engaging in and supporting environmental, biomedical, physical, and safety research related to the development of energy sources and utilization technologies;" (Emphasis added.) Id. § 5813(3).
>
> 3. "encouraging and conducting research and development in energy conservation, * * *;" (Emphasis added.) Id., § 5813(8).
>
> 4. "encouraging and conducting research and development in clean and renewable energy sources." (Emphasis added.) 42 U.S.C.A. § 5813(12).

Thus DOE has legal authority to undertake energy research, development and demonstration projects on its own wholly with Government funds, unless its discretion is limited by a specific provision of some other law.

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-156489

OCT 11 1979

Honorable Dan Daniel, Chairman
Special Subcommittee on NATO Standardization,
Interoperability and Readiness
Committee on Armed Services
U.S. House of Representatives
Washington, D.C.

Dear Mr. Chairman:

In line with your request of August 14, 1978, regarding H.R. 11607 and H.R. 12837 (95th Cong., 2d Sess.), we are forwarding our comments on H.R. 4623, ~~(96th Cong., 1st Sess.),~~ ~~the~~ "NATO Mutual Support Act of 1979."

The predecessor to H.R. 4623--H.R. 11607, which was submitted by the Department of Defense (DOD) for consideration last year--would have provided very broad authority to the Secretary of Defense to enter into agreements with NATO countries and subsidiary bodies to further operational cooperation and cross-servicing of forces. In commenting on that bill, we stated that, while sympathetic to DOD's problems in these areas, we felt that specific legislative relief, in lieu of H.R. 11607, could be provided to allow DOD the flexibility it might need to meet goals in these areas. We commented further that H.R. 11607 (1) did not provide adequate management and internal controls over costs and (2) did not provide adequate Congressional oversight of complex issues.

The Department of Defense was requested to redraft and resubmit its proposal to more simply and concisely cover the needed authority. Unfortunately, in our judgment, H.R. 4623 fails to meet that objective. Its terms are broad and sweeping, as was true of its predecessor. The authority to be conferred is not closely or explicitly tailored to the Department's stated needs. Furthermore, its impact upon other legislation, such as the Arms Export Control Act, would be significant. Accordingly, we do not believe that its enactment, as drafted, would be advisable. Many of our objections to H.R. 11607 (and its companion H.R. 12837) apply with equal force to H.R. 4623. In addition, we have enclosed our detailed comments and questions regarding H.R. 4623 for use by the Committee in considering the legislation.

B-156489

We wish to state that we remain sympathetic to the Department's needs in the area of NATO logistical support and cross-servicing. H.R. 4623, however, goes well beyond what is needed. A far better approach, discussed with DOD during last year's hearings on H.R. 11607 and H.R. 12837, would be to state with clarity and particularity each and every provision of existing law that needs modification, and to state those modifications in clear language. We believe this is perfectly possible.

Because H.R. 4623 also was referred to the Committee on Foreign Affairs, and because the bill could have a serious impact on the Arms Export Control Act, we are sending a copy of this letter to the Chairman of that Committee.

If we can be of further assistance in analyzing the proposed legislation, please let us know.

Sincerely yours,

Comptroller General
of the United States

cc: Chairman, House Committee
on Foreign Affairs (w/enclosure)

DETAILED GAO COMMENTS AND QUESTIONS
on H.R. 4623 (96th Cong., 1st Sess.),
"North Atlantic Treaty Organization
Mutual Support Act of 1979"

I. DOD Supporting Statements for H.R. 4623:

H.R. 4623 was proposed to Congress by the Department of Defense (DOD) as part of its legislative program for the 96th Congress. DOD outlined its justification for this bill in a letter to the Speaker of the House from the General Counsel, DOD dated April 30, 1979, DOD 96-4. In addition, DOD prepared an undated Fact Sheet "Rationale for DOD 96-4" summarizing DOD's position. The statements in these documents should be carefully compared with the provisions of the bill.

Referring first to the DOD fact sheet "Rationale For DOD 96-4," DOD asserts that some countries, particularly Germany and the Netherlands, can no longer accept U.S. contracting conditions because they find them "distasteful even insulting." What evidence is there to substantiate this assertion and what effect would this bill have on the offshore procurement agreements (OPA) entered into with NATO member countries in the 1950s? Most of those agreements specifically incorporate some of the "distasteful" U.S. Government contract terms. Have these nations repudiated these agreements or will the bill, if passed, effectively supersede those agreements? If so, what will be the effect

upon the U.S. European Command (USEUCOM) procurements in Europe that might be outside the scope of this bill? In order to assist Congress in evaluating the merits of the bill, we believe DOD should provide, for the record, evidence of the specific objections raised by the NATO members and by NATO and its subsidiary bodies to continued acceptance of standard U.S. government contract clauses. This would help identify the changes needed to address the specific objections, in lieu of overly broad language.

It should be noted that since the introduction of H.R. 11607 last session, the Cost Accounting Standards Board has gone very far toward exempting foreign contracts from its standards. 1/ Also, on the audit question, DOD already has authority to waive audits by the Comptroller General under existing law (10 U.S.C. §2313) if the contract is with a foreign government and DOD has authority to waive applicability of the Truth in Negotiation Act, including audits by DOD, under existing law (10 U.S.C. 2306(f)).

DOD's fact sheet states, "Nation-to-nation support must be provided through agreements as is done throughout NATO." It would be useful to know the status of agreements of this

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1/ Contracts and subcontracts with foreign governments are exempt from all standards and rules of the Board. Foreign contractors and subcontractors need only comply with Standards 401 and 402 and the requirements to submit a disclosure statement. 43 Fed. Reg. 52693-4, November 14, 1978.

nature that now exist within NATO and in what areas DOD has been unable to conclude agreements because of existing law. If DOD can cite specific examples, clearer legislative relief might be possible.

The DOD fact sheet cites 3 items that the bill will not do. First, it will not "affect the way the U.S. Government deals with private contractors." This appears to be incorrect inasmuch as the bill, as we read it, would permit any of the NATO countries or subsidiary bodies of NATO in effect to act as our procuring agent. They, in turn, could make acquisitions from private contractors in Europe or elsewhere on our behalf, and do so entirely outside the normal U.S. procurement system.

Second, DOD asserts that the bill will not "materially reduce USEUCOM procurement from U.S. sources." If DOD is referring strictly to USEUCOM, the level of purchases from U.S. sources is not particularly high; therefore this is not especially material. If, however, DOD means all U.S. forces in Europe, then this assertion may be of doubtful accuracy.

Lastly, the fact sheet states that the bill will not "substitute for contracting in procurement of initial order quantities of major equipment." Our comment with respect to this appears below in connection with section 3, subsections (b) and (c).

DOD's letter dated April 30, 1979, transmitting proposal DOD 96-4, (on page 2, para. 2) refers to "NATO standard agreements." Again, we believe these agreements should be specifically identified and supplied for the record. Are there agreements beyond STANAG 2135, which was referred to by General Gregg during his testimony last year in support of H.R. 11607? 2/

II. Section-by-Section Analysis of H.R. 4623:

Section 2, Page 2, Lines 11-15.

The term property is broad and general and in its generic definition can include personal property (which includes military hardware), real property, supplies and equipment, furniture and furnishings. Although section 3(c) prohibits transfers of certain military hardware it seems that the provisions of section 2 could cause some misunderstanding and section 3(c) could be ignored. We suggest that Defense be required to define the term "property" as used in the bill or use the word "equipment" in section 2 to be compatible with section 3(c).

Section 2, Page 2, lines 15-20: This language implies that our NATO allies do not now have such laws or procedures.

2/ Hearings before the Special Subcommittee on NATO Standardization, Interoperability and Readiness House Committee on Armed Services, H.A.S.C. No. 95-72, 95th Cong., 2d Sess. at p. 1196.

DOD in its justification for H.R. 11607 last Congress seemed to suggest that the contrary was true. 3/ What country or countries are to take the lead in this? Is the U.S. to compromise first, hoping that our allies will follow, or have they already compromised so that it is now appropriate for the U.S. to introduce some flexibility into its own system?

Section 3(a), Page 3, lines 6-10: The effect of this language is essentially the same as that contained in H.R. 11607 (which was "Notwithstanding any other provision of law * * *"). GAO last year stated in our comments on H.R. 11607 that we felt that language was overly broad. The Special Subcommittee in its report 4/ last Congress concurred in our view and posed several questions that remain unanswered. While certain aspects of Chapter 137 of Title 10 U.S.C. may pose difficulties, we doubt that the entire chapter should be cast aside. For example, title 10 U.S.C. 2306 contains a prohibition, long existing in U.S. law, against any cost-plus-a-percentage-of-cost system of contracting. Why should such a prohibition be discarded? Similar questions can be raised regarding other sections

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3/ Ibid., Statement of Hon. Dale W. Church at page 1152, Hearings on NATO.

4/ NATO Standardization, Interoperability and Readiness, Report of the Special Subcommittee on NATO Standardization Interoperability and Readiness, House Committee on Armed Services, H.A.S.C. No. 95-101, 95th Cong., 2d Sess. at 42.

of the chapter. Significantly, on line 7 of page 3 appear the words "or other laws." What other laws does DOD have in mind and why is DOD still unable to specify for Congress what laws need to be modified, relaxed or waived? Amendments to those specific laws is preferable to broad language that may go beyond what actually is needed. The language proposed could lead to serious unintended results.

Section 3(b) and (c), Page 3, lines 11-20: This section states that once in the system, replacement of major items and spares could be attained through the agreements that would be established under the authority of this bill.

The limitation of the acquisition of major items of organizational equipment is specifically tied by the language here to initial issue quantities. Why is there no limitation placed upon follow-on acquisition?

In subsection (c), the bill excludes "aircraft, naval vessels, tracked combat vehicles, torpedoes, strategic, or nuclear capable missiles." (This language differs from that H.R. 11607, page 2, lines 9-10, namely "aircraft, missiles, naval vessels, tracked combat vehicles, other weapons, or naval torpedoes.") Basically, this language leaves open the possibility that DOD could sell or acquire a large number of major items, for example, tactical missiles for ground, air, and naval application (so long as they are not nuclear), radars, communication systems, Electronic Countermeasure

(ECM) equipment, munitions of virtually all variety, artillery, non-tracked vehicles and so on. DOD should specify precisely what it intends to transfer, or (looking at section 4) acquire under this bill. How much of total U.S. requirements would be satisfied under this authority? Perhaps the language in the bill should be amended so as to provide a greater degree of specificity because, as now written, it is a gigantic "loophole" and would seem to permit far more than mere logistics support.

Section 3(d)(2), Pages 4-5: Our concerns about agreements to provide base operations and/or use of facilities remain the same as expressed in our comments last year on H.R. 11607. (Refer to our report "Planning Host Nation Support for U.S. Forces in Europe" LCD-78-402, August 9, 1978.)

Generally, DOD can enter into multi-year agreements under the provisions of OMB Circular A-34, but cannot record (or incur) multi-year obligations against single year appropriations. (See lines 3-5 and 23-24, page 4.) With respect to the cancellation of provisions there are three options for the cost of cancellation and the payment of those costs. Let us assume that option (A) and (B) do not work and (C) has not gone into effect, in other words that no appropriation has been made for termination payments. This appears to create an exception to what would otherwise be a violation of the Anti-deficiency Act. It would give DOD a very broad selection

of appropriation accounts from which to draw funds. It is also noteworthy that option (B) makes no reference to reprogramming. This aspect should be considered.

Section 4(a), Page 5: Here it is clear that the bill permits not only "buying" but also "selling." What precisely does DOD contemplate in that regard? Will this supplant the Foreign Military Sales (FMS) aspects of the Arms Export Control Act (AECA) in significant ways? We note, for example, that there are no requirements restricting transfer of equipment to third countries, particularly non-NATO states. If the bill would impinge upon the AECA, there appears to be a significant deprivation of the congressional review function that otherwise would exist under that Act. Reading this section along with section 3(c), which leaves many major items of equipment subject to the bill's provisions, the effect could be significant.

Also, the bill employs the term "transfer" in contrast to "sales". (See section 2, page 2, lines 11-15.) In context of section 2, it may not be clear that such transfers must be for compensation, or short term loan, as provided in section 5.

The Subcommittee may wish to consider whether a dollar or some other limitation should be specified in the bill for these transfers.

Section 4(b): Provision of, or acquisition of services can be priced in accordance with the Economy Act, as it applies between U.S. departments and agencies. What we see is that

this would essentially permit DOD to waive certain personnel costs (e.g., military and civilian retirement and benefit costs which could constitute an add on of somewhere in the neighborhood of 25 percent.) Similarily, this could permit waiver of asset use charges and other unfunded costs. This apparently is the practice traditionally, at least, by the U.S. departments acting under the Economy Act. Why should this pricing practice be extended to transfers under this bill, especially when GAO has consistently maintained that there should be full cost recovery for equipment and services under FMS transactions?

Section 4(c): While this section appears superficially to provide some controls, it is critical to know how this will be monitored and who will monitor this. Are the inventory levels referred to simply those in Europe or do they include inventory levels in the U.S.? If they are limited to inventory levels in Europe, could transfers be made from increased inventories in the U.S.? Also, couldn't DOD circumvent this provision by the simple mechanism of direct orders from existing production contracts, again circumventing the AECA? In short, there is a substantial question about the definition of the words appearing on page 5, lines 7-10 (section 4(a)), "* * * in the inventory under the jurisdiction and control * * *." Moreover, inventories could be increased so long as this was not "solely" for the purpose of this bill.

The basic thrust of this bill, as advanced by DOD, appears to be aimed at assisting in the routine support type operations wherein the other NATO forces could requisition supplies and parts from U.S. stocks in Europe. If this were to occur, the U.S. inventories in Europe would necessarily have to increase to meet the new demands and to prevent a degradation of supply responsiveness for U.S. forces. Any increases in stock levels will result in increased costs to the U.S. Government. The Committee may wish to question DOD on the following:

A. Will the logistical support provided by the U.S. forces in Europe to other NATO allies be for filling routine supply requirements or be limited only for supply needs required by military exigency? Will the implementing regulations specify the type of requirements permitted to be serviced from the U.S. supply system in Europe?

B. If the U.S. supply operations in Europe are increased due to the requirements of NATO forces, will the increased costs to operate the system be passed on to the NATO countries or absorbed by the U.S.?

Section 5(iii): Clearly, we could end up with uneven exchanges. Who will monitor this and how will it be monitored? Who will make the valuations to assure the maximum degree

of equality? If there is a price differential where whatever the U.S. exchanges is more valuable than what the U.S. receives, the U.S. is in effect making a subsidy. On the other hand, if the reverse is true, DOD is in effect augmenting its appropriations. What mode of valuation would DOD use (i.e., replacement cost or acquisition cost)? This has long been a controversial subject area of FMS where there are sales from stock.

Section 6(a): Why shouldn't the regulations go to the committees 60 days in advance and why should there not be some mechanism whereby the regulations may be disapproved? The regulations are likely to be very complicated and 30 days time would appear to be inadequate.

Section 6(b), Page 7, lines 10-12: The use of accounting terms in this section is not technically correct. Accrued revenues and accrued expenditures are not liquidated. We believe DOD meant to say that all accounts receivable should be collected and all accounts payable paid either within 90 days of incurrence or quarterly. In any case, we do not see any valid reason for this type of legislative requirement. It is not always possible or correct to pay all accounts payable or collect all accounts receivable within 90 days or quarterly. Also, 30 days from date of invoice is the generally accepted period for payment of bills or collection of accounts receivable.

Section 6(c), Page 8: DOD would need to modify its existing accounting system or develop a new system to accomplish this, especially if this works out to involve a significant number of transactions, which it probably will. We believe that modification of the existing accounting systems may be the best alternative to support the accounting requirements of this section as well as sections 4(b), 5, 6(b) and 7. There is a need to know what systems are now in place or will be put into place. Will the systems be approved by GAO? On line 19, page 8, what is meant by "appropriate reimbursement"? In the sentence beginning on line 21 on page 8, why are payments from subsidiary bodies only, not countries, referred to? Also, DOD might in effect end up with more money, or "free money," if DOD sells equipment, etc. but has no need to replace it. This also has been a problem area in FMS transactions. Lastly, why shouldn't funds be covered into miscellaneous receipts of the Treasury and resulting needs for funds by DOD taken care of by subsequent appropriations, thereby retaining greater congressional control?

Section 6(d), Page 9: If these provisions of law as implemented by contractual language are offensive to the sovereignty of the NATO members, wouldn't this continued applicability also be offensive?

Section 7: The DOD April 30, 1979, transmittal letter indicates that these agreements would be subject to the Case Act. Therefore they should be reported to Congress when concluded. Why shouldn't the reporting requirement specify that the reports also be directed to the Armed Services, Foreign Affairs and Appropriations Committees? Also, in view of the complicated accounting aspects requiring close monitoring, it may be prudent to require that the reports be submitted to the Comptroller General as well.

Section 8, Page 10: Under the Ottawa Agreement, one of the NATO subsidiary bodies is the NATO Maintenance and Supply Agency (NAMSA). If the proposed legislation is adopted, DOD plans to make use of NAMSA for depot maintenance of equipment as well as other logistics support. (Source: DOD's Fifth Report on Rationalization/Standardization within NATO, January 1979, pp. 43, 49). Up to this time the U.S. forces in Europe have made only limited use of NAMSA because in part, NAMSA has declined to enter into contracts requiring full compliance with U.S. procurement laws and regulations. At present, the U.S. may not legally contract with NAMSA. Any extensive use of NAMSA would have an impact on the cost of this program. Also, the use of NAMSA for any extensive maintenance efforts raises a question as to whether corresponding reductions will occur in maintenance programs in

facilities in the United States. We believe the Committee may wish to question DOD on these matters.

Other General Observations:

There is nothing in the bill to indicate who within DOD (or what activity) is to control the transactions that would occur within the scope of the authority to be conferred. What precisely does DOD have in mind with respect to sales or transfer of U.S. items or services? What cooperation will exist with the Defense Security Assistance Agency?

If the U.S. is to acquire goods and services under this bill, what mechanism will exist to assure the fairness and reasonableness of the prices paid? This question is particularly significant if it is a purchase from NAMSA, who in turn may have made an acquisition from a European or American manufacturer, or if the purchase is to be from a foreign government which has in turn contracted for the goods or services. What administrative and other indirect charges will we have to pay? What provisions for cost and price control will be imposed upon private firms?

Lastly, what will be the implications of this bill for logistical support (spare parts, depot maintenance, etc.) of the F-16 program? The bill excludes only "aircraft", not their parts.